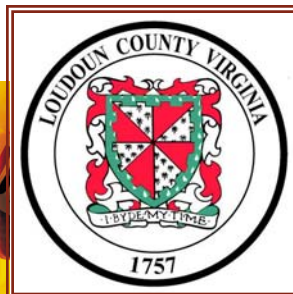




LOUDOUN COUNTY FIRE MARSHAL'S OFFICE 2009 ANNUAL REPORT



*Teamwork * Integrity*
*Professionalism * Service*



FIRE MARSHAL'S OFFICE

MESSAGE FROM THE CHIEF FIRE MARSHAL

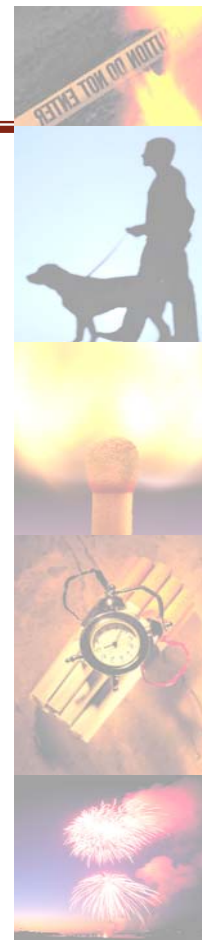
On behalf of the Loudoun County Department of Fire, Rescue and Emergency Management, it is my pleasure to present to you the Fire Marshal's Office report for 2009. This report represents a summary of the key accomplishments of the Office over the last 12 months.

In May 2009, I had the opportunity to attend a fire prevention conference sponsored by the United States Fire Administration in Emmitsburg, MD. A presentation was heard on a project known as "Vision 20/20," which resulted in a report outlining a national strategy for addressing gaps in the nation's fire prevention efforts. There are five strategic areas designated in the report, which various fire service and related workgroups have embraced as a model for making our nation safer from the devastating effects of fire. These include: Increasing advocacy for fire prevention; Conducting a national fire safety education/social marketing campaign; Raising the importance of fire prevention within the fire service; Promoting technology to enhance fire and life safety; Refining and improving the application of codes and standards that enhance public and firefighter safety and preserve community assets.

I was able to bring this report back and compare its contents with that of our Departmental Strategic Plan and I am pleased to report that the Fire Marshal's Office is performing in many of the program areas which have been identified within this national mission, as evidenced by the following:

- The Public Fire and Life Safety Education program is continuing to coordinate the "door-to-door" smoke alarm program. The pilot program within the Town of Purcellville has been formalized and expanded to the Towns of Round Hill and Hamilton. Numerous smoke alarms have been installed, replaced or simply given maintenance, **and the Office knows of at least two residential fires in Purcellville where installed smoke alarms have activated to provide early warning and escape to home occupants.** Additional programs continue to be delivered consistent with programs sponsored by NFPA ("Risk Watch" and "Learn Not To Burn"), Safe Kids Virginia and the Home Safety Council.
- The Fire Prevention Code Enforcement section continues to prioritize fire safety inspections for places of public assembly. As well, life safety checks at bars and nightclubs are a high priority due to the tendency for these locations to become overcrowded. **Almost 700 such inspections and over 800 life safety spot checks were completed in 2009.**
- Fire station personnel throughout Loudoun County conduct Fire Safety Surveys

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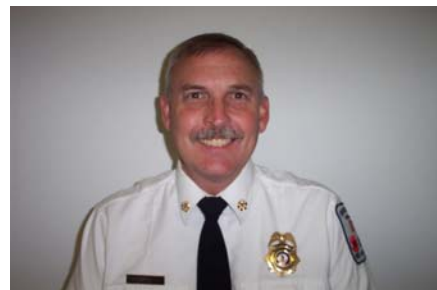
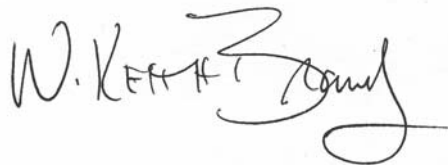
FIRE MARSHAL'S OFFICE

for over 1,000 multi-family buildings. Given that 83% of fire deaths and injuries occurred in the home in 2008, **these inspections contributed to Loudoun County's experience of zero fire deaths in 2009.**

- Investigation of over 200 fires and related incidents have been completed with a 74% closure rate. **Investigated cases resulted in 53 criminal arrests.**
- Staff participates regularly in the national and state code development process to promote improvements to the building and fire codes. **Residential sprinklers, which are now part of the national building and residential codes, continue to be opposed by home builder groups.** Loudoun County experienced over \$10 million in losses from fires which were investigated by the Fire Marshal's Office. Many losses were in homes where residential sprinklers could have suppressed the fire or kept it in check until the arrival of the fire department.
- The Fire Marshal's Office is using "Twitter" as an alternative means to communicate timely fire and life safety messages to the public. A social networking policy is currently under review and a "Facebook" page will be developed in 2010 to further the dissemination of information.

This report will provide additional details as to the listed activities as well as other specialty programs and activities that the Fire Marshal's Office participates in. My goal for 2010 is to continue to improve the performance of the Office, to enhance public outreach, and to ensure that programs are consistent with the collective mission of Loudoun County and the national fire service.

Sincerely,



W. Keith Brower, Jr.
Chief Fire Marshal



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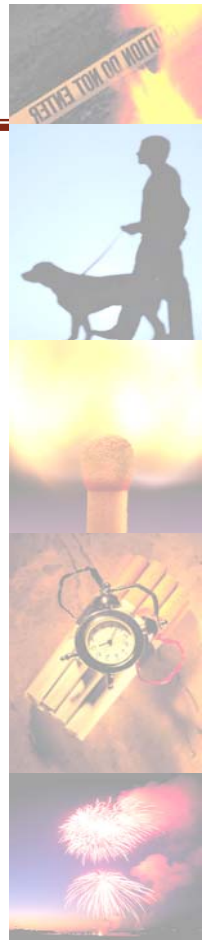
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FIRE MARSHAL'S OFFICE

**FIRE MARSHAL'S OFFICE
MISSION STATEMENT**

The Fire Marshal's Office seeks to provide a safe living and working environment for residents, workers and travelers within Loudoun County. Key aspects of the mission include:

- Proactive Public Fire and Life Safety Education programs
- Reduction of fire risk through abatement of common fire prevention code violations
- Rapid and professional emergency response
- Investigation into the origin of fires and explosives related incidents
- Juvenile Firesetter Intervention
- Investigations into the release of hazardous materials



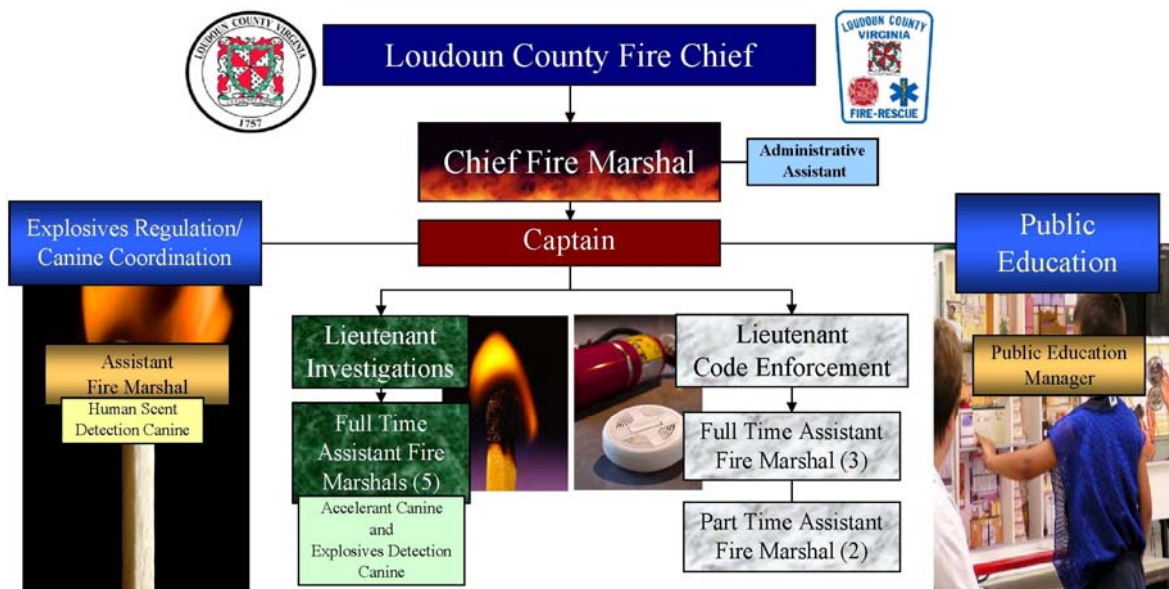
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FIRE MARSHAL'S OFFICE ORGANIZATION

The Fire Marshal's Office is comprised of 17 personnel - 13 full time and 2 part-time sworn law enforcement officers, 1 civilian Public Education Manager and 1 Administrative Assistant.

The Fire Marshal's Office is organized into three primary sections- public fire and life safety education, fire prevention code enforcement and investigations. There are several special operational programs, such as the bomb squad and the canine program, however these are collateral responsibilities assigned to regular staff which transcend section boundaries.

The FY 09/10 budget for the Fire Marshal's Office was \$1,946,000.



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TRAINING AND CERTIFICATION

All sworn members of the Fire Marshal's Office are trained according to the Code of Virginia requirements for Fire Inspector and Fire Investigator, with Law Enforcement powers. In addition to the required annual recertification requirements, sworn members attended a variety of new specialty training this year. Training subjects included advanced bomb squad training, interviewing skills and techniques, code enforcement updates, legal updates and fire investigation skills training.

In 2009, personnel attended over 3,000 hours of required training. One member achieved certification as a Certified Fire & Explosives Investigator (CFEI). This is a voluntary program intended to refine skills and enhance the competency of fire investigators. Six other members of the office possess this certification.



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PUBLIC FIRE AND LIFE SAFETY EDUCATION

The Public Fire and Life Safety Education section was involved in a variety of programs throughout the year. The section is in the process of alignment to follow the "Vision 20/20" report on National Strategies for Fire Loss Prevention, which is aimed at building on current prevention program successes while identifying and remedying the identified gaps in community fire prevention efforts. The "door to door" smoke alarm campaign, entitled "Put A Finger On It," was launched in Purcellville in 2009 and is representative of a strategy outlined in this report.

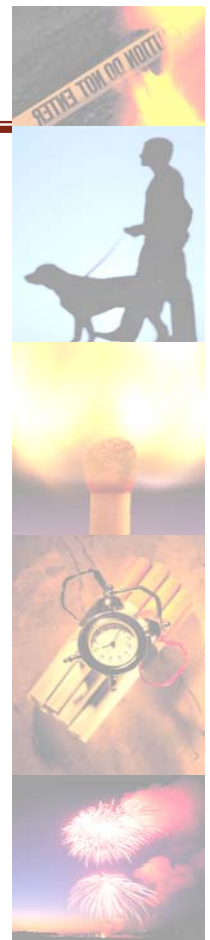
The smoke alarm program is geared to ensure that homes are equipped with working smoke alarms on each living level of a residence and in bedrooms. Fire station personnel conduct smoke alarm inspections, replace batteries and, where needed, install new alarms. **All of these activities are performed at no cost to the resident.** Free home fire safety checks are also offered as part of this program. In 2009, over 250 home visits were performed in Purcellville and approximately 100 smoke alarms were installed. **Thanks to smoke alarms installed through this program, two residential fires in Purcellville were detected early on, which allowed occupants to safely exit their home.**

In 2010, the program is being expanded to cover other areas in the western part of the county such as Hamilton, Round Hill, Lovettsville, Aldie and Middleburg.

In addition, the Public Education Office continues to coordinate a variety of other fire and life safety programs available to the public at no cost. These include:



The McGruff Safety Camp: In coordination with the Loudoun County Sheriff's Office, this summer camp for 4-6 year olds covers numerous safety lessons including fire safety and prevention, bike safety, helmet safety, stranger danger and poison safety.



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The Life Safety Trailer: The trailer is used to teach families about the importance of smoke alarms, home fire escape planning and severe weather emergencies. **Annually, the trailer has over 2,000 visitors.**

9-1-1 simulator: Reaching over 800 children in 2009, this program teaches children the steps needed to access emergency help from their home or cell phone.



File of Life: This program provides emergency personnel with pertinent, life saving information about a patient, such as past medical history, current medications, allergies and emergency contacts. **File of Life packets are distributed at no cost to senior citizens throughout the county.**

Head Start: This is an ongoing partnership between the Department and the local Head Start office that provides at risk families education about fire prevention and other safety related issues. **In 2009, 102 children received services through this program.**

Let's Talk Babies/Toddlers: This program is done in conjunction with Inova Loudoun Hospital and offers child safety seat education to expectant parents. **In 2009, 300 parents participated through this program.**



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FIRE PREVENTION CODE ENFORCEMENT

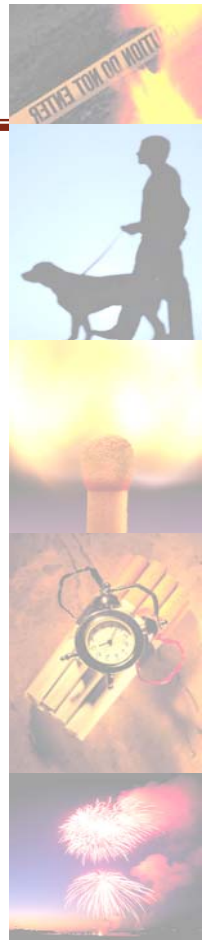
Fire safety inspections are conducted pursuant to authority granted in the Code of Virginia. Loudoun County adopted the "Virginia Statewide Fire Prevention Code" in the early 1990's and codified it as the Loudoun County Fire Prevention Code. The Loudoun County Fire Marshal, and sworn assistants, are granted local authority to enforce the provisions of the fire prevention code, to include local amendments, within the county and the seven incorporated towns, in accordance with §27-97 of the Code of Virginia. The code also provides that localities may charge permit fees to defray the costs of inspections for certain types of buildings and operations. **In 2009, \$100,160.00 in revenue was generated by the issuance of 1,179 permits.**

The goal of the Fire Prevention Code Enforcement section is to ensure public safety through compliance with various fire safety regulations. **In 2009, there were no reported fire deaths to either the public or to emergency response personnel within Loudoun County.** The common hazards noted during regular fire safety inspections include blocked exits, overcrowding, excess storage quantity and height, improper use of extension cords and non-working emergency lighting. **In 2009, 2,873 fire safety inspections were completed and over 1,200 complaints were handled.**



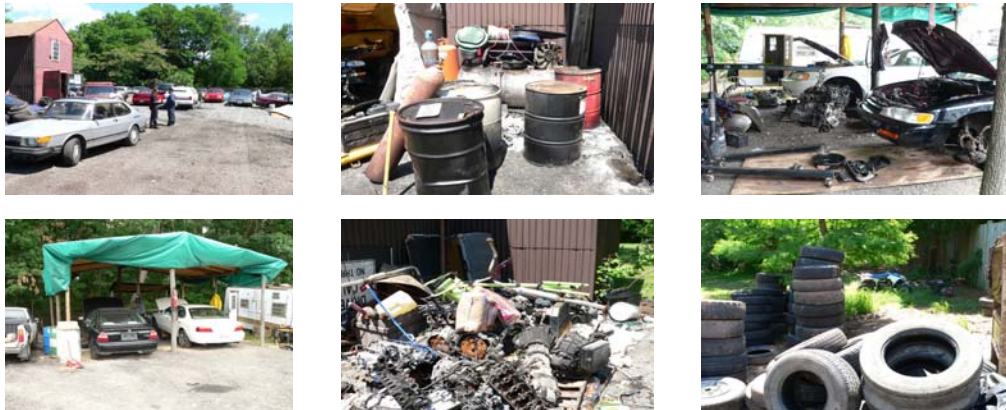
Places where large groups of people assemble continue to rank as the highest priority for annual fire safety inspections and routine fire safety audits. Annually, inspections are performed in the approximately 700 restaurants, theaters, schools and churches in Loudoun County and the incorporated towns. As well as over 800 fire safety audits, or "spot checks" are performed to prevent overcrowding and other unsafe practices.

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The Fire Marshal's Office also focused on several issues in 2009 which resulted in increased demand for fire prevention code enforcement. These include:



Illegal auto repair facilities: As areas undergo rapid transition, facilities such as these tend to become prevalent. Usually operating in vacant commercial buildings and with no zoning or permit approval, some of these locations become staging areas for stolen vehicles. Many operate unapproved paint booths or use other hazardous materials, which, if discharged, can cost thousands of dollars to clean up. Where these have been discovered, the responsible party has been successfully prosecuted under the Loudoun County Fire Prevention Code.



Illegal burning: Contractors who attempt to avoid the costs of proper disposal of construction debris and other solid waste have developed a practice of transporting materials to remote locations and burning it. Often, fires are ignited and then abandoned, causing escape and damage to other property.



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Fireworks: The use of unapproved and otherwise illegal fireworks is extremely popular in Loudoun County. Every January, staff meets with approximately thirty fireworks retailers and public display sponsors to ensure a safe July 4th season. Annually, there are as many as forty "legal" retail locations and eighteen to twenty public and private displays which are inspected. Illegal use of fireworks which explode, rise into the air, travel laterally or shoot projectiles produce numerous calls for service during the holiday. This illegal activity has resulted in arrests and successful prosecution of offenders.

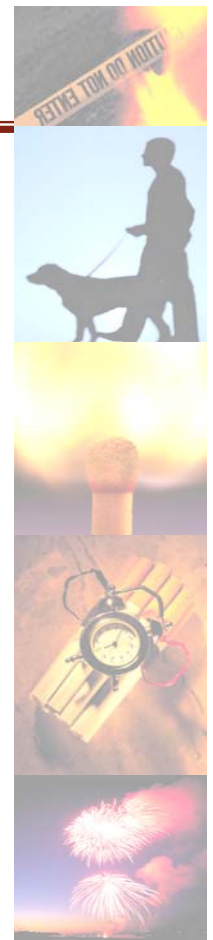
PLANS REVIEW

The Fire Marshal's Office, in conjunction with the Planning and Facilities Services Division, is tasked with the review of construction site plans. The objective of careful and concise reviews is to identify design deficiencies that could result in operational emergency response issues once a project is completed. Many of the design issues corrected during review have to do with emergency vehicle access to a building or a community. **In 2009, the Fire Marshal's Office assisted in the review of 64 new development projects, 36 more than were completed in 2008.**

The Fire Marshal's Office also reviews and provides recommendations for specific fire lane issues not addressed by other agencies within the County of Loudoun. **In 2009, 149 fire lane reviews and inspections were completed.**

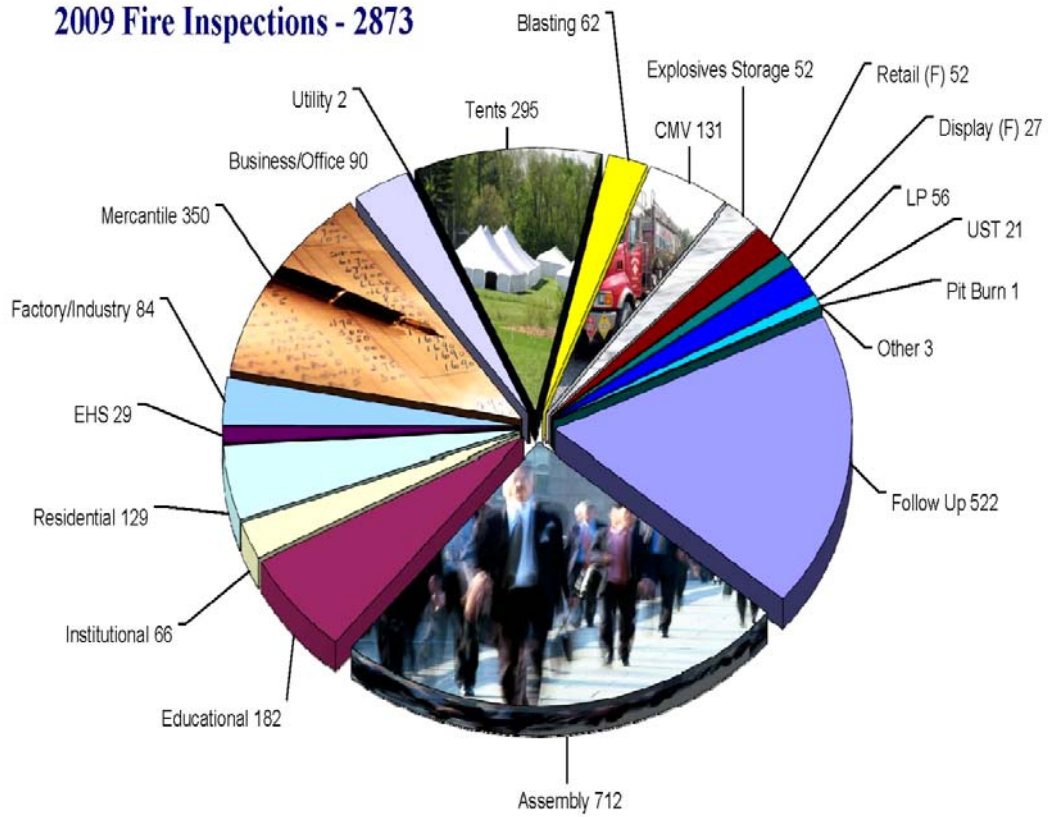


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2009 Fire Inspections - 2873



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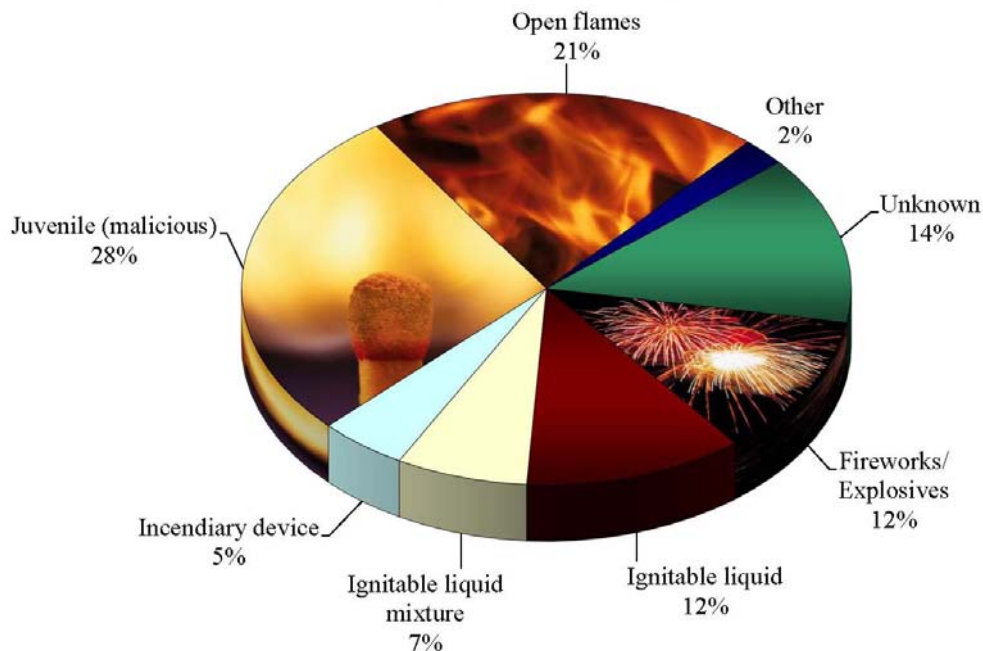
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INVESTIGATIONS

Pursuant to §27-31 of the Code of Virginia, all reported fires and explosions must be investigated to establish cause. Each year numerous such incidents occur, however not all are reported to the Fire Marshal's Office. Department policy requires the Office to respond whenever a reported fire results in damage greater than \$50,000, is believed to be incendiary in nature, results in a human burn or fatality or involves government property. In 2009, 223 fire and related incidents required the response of investigators. These resulted in over 3,200 follow up and support activities, 53 criminal arrests and an overall case closure rate of 74%

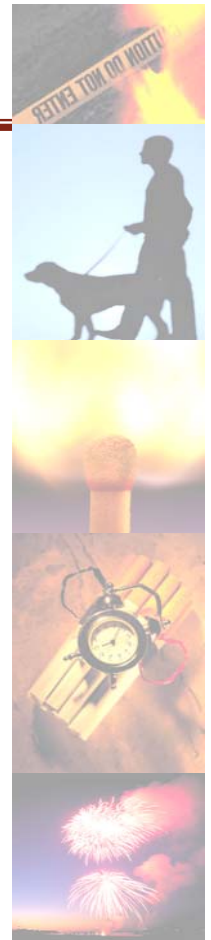
The following chart provides a breakdown of reported criminal fire causes:

2009 Reported Incendiary Fire Causes



The information that is derived from an investigation may point to a need to educate the public or to demonstrate to an equipment manufacturer certain design defects that require correction. The office, through the use of a new investigations database, collects data on these causal factors as well as the location where significant residential fires have occurred. Residential fires account for 83% of fire deaths and injuries nationally each year. This information is being used to proactively focus current public fire and life safety education programs in Loudoun County.

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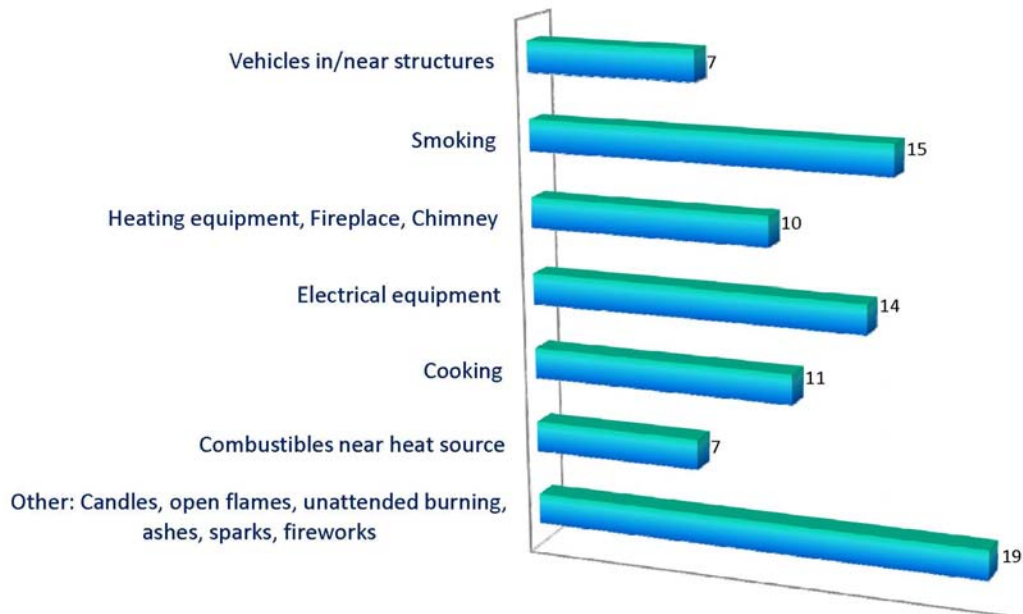
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2009 Closed Incendiary Cases



*Death of offender, prosecution declined, extradition declined, refused to cooperate, juvenile release

Leading Causes of Accidental Fires in 2009



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2009 CASES OF INTEREST

Commercial Building Fire 149 Catoctin Circle SE, 5-21-09

The Fire Marshal's Office responded to the scene of a commercial building fire at a car wash in Leesburg. The loss was estimated at \$3,000,000. The fire is still classified as under investigation, pending testing by the insurance company. **The building was originally built without a fire sprinkler system. It has been rebuilt and is fully operational with a full fire sprinkler system.**



House Fire 21660 Mitchell Court, 5-10-09

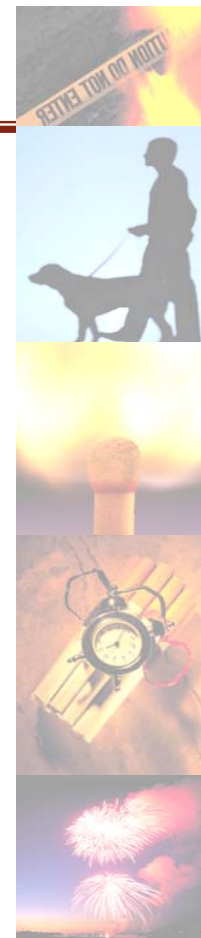
The house fire was located within a mile from the temporary Moorefield fire station. The single family home was consumed in minutes due to the effects of wind and combustible exterior siding components. The fire was accidental in nature caused by a heat lamp which came into contact with combustible materials, and resulted in a \$700,000 loss.



House Fire 36011 Creamer Lane, 6-10-09

The fire in this single family home occurred during a lightning storm and caused damages estimated at \$600,000. Residents were not at home at the time of the fire.

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House Fire 39053 Piggott Bottom Road, 2-2-09

The cause of the fire was accidental due to an electrical problem. The fire caused an estimated \$600,000 in damages.



House Fire 22 McPherson Circle, 4-19-09

The cause of the fire was electrical and started in or around an attached shed. Damage was estimated at \$590,000.

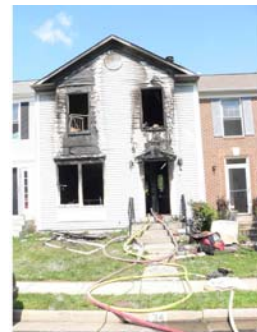


House Fire 42811 Conquest Circle, 3-14-09

This accidental fire was caused by the unintended release of propane gas which made contact with an open flame. Damage was estimated at \$400,000.

House Fire 21200 Hedgerow Terrace, 7-1-09

Several residents of this home, including a newborn, narrowly escaped this fire which originated in the basement. The fire was determined to be accidental in nature caused by an electrical short. Damage was estimated at estimated \$350,000.



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Barn Fire, 3-11-09 41241 Stone School Lane

The fire was accidental in nature and caused an estimated \$200,000 in damages. In addition, the fire resulted in the loss of several domestic animals.

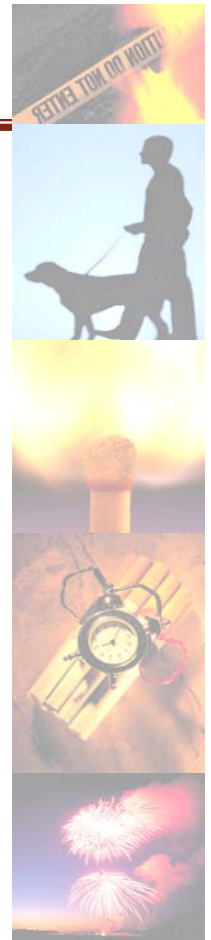
House Fire 533 Artillery Terrace, 12-28-09

The fire in this townhouse caused an estimated \$465,000 in damages. The cause of this fire is under investigation pending further testing by the insurance company.



House Fire 111 Hancock Place NE, 12-29-09

The fire in this townhouse caused an estimated \$200,000 in damages. **An occupant was rescued from the second floor by first arriving fire rescue units.** The fire displaced several families. The cause of the fire is under investigation pending further testing by the insurance company.



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Origins in Structure Fires 2009



Data collected by Loudoun County Fire Marshal's Office

Floor plan artwork: courtesy of the Florida State Fire Marshal's Office

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BOMB SQUAD

The Bomb Squad is a combined team between the Fire Marshal's Office and the Sheriff's Office. Each agency has five bomb technicians on the team, who have successfully completed the seven week Hazardous Device School sponsored by the FBI as well as additional advanced training in a variety of related subject matters. **The bomb technicians duties are a collateral function that are performed in addition to their regular duties in the Fire Marshal's Office and the Sheriff's Office. The bomb squad had a total of 39 responses, and rendered safe a total of 119 explosive related items.**



There were 212 other activities which include the following: Liaison with other agencies, SERT team assist, investigation assist, narcotics assists, special searches, explosive disposals, explosive recoveries, public education, assist other jurisdictions, special events, issue of warrants, dignitary protection, planning, equipment maintenance, training and meetings.

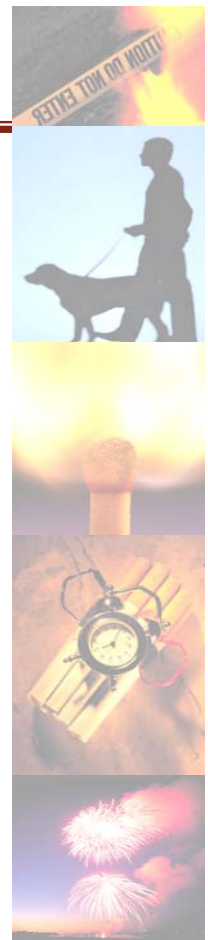


Funding for the bomb squad comes primarily through grant funding. Much of the equipment in service today has been donated by outside agencies. The Department of Homeland Security (DHS), through its Urban Area Security Initiative (UASI) program, funds regional projects to improve "first response" capability for a wide range of emergency situations. Through a regional cooperative effort, the extreme funding needs of the eight state and local civilian (non-military) bomb squads within the National Capitol Region (NCR) were approved to acquire basic and advanced emergency response equipment.

The UASI grant funds that have been received greatly increase the capabilities of the National Capital Region Bomb Squads to meet the current challenges facing the world today.

Loudoun County has also received grant funds from the Department of Criminal Justice Services allocated for bomb squad training and equipment. The Department of Criminal Justice Services grant funds specific to Loudoun County allow the County to begin to fill the local gaps that are not addressed in the UASI initiatives.

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The grant funding enhances the overall safety of responding bomb squads, other responders and the general public by adequately equipping responding bomb technicians with the knowledge, skills and abilities necessary to mitigate these types of emergency responders.

The Fire Marshal's Office, in conjunction with the Department of Management and Financial Services, works to ensure proper accountability and records management for all of the assets received through the grant funds.

CANINE

The Fire Marshal's Office currently utilizes two canines in order to provide enhanced investigative services for the community and the region. The canine handlers are Assistant Fire Marshal's who perform canine services as a collateral responsibility within their regular job. **The annual operational budget is approximately \$2,000. Other operational costs are offset by sponsorships.**

The following provides an overview of the specialized canines that are currently in use in the office:



A **Bloodhound** is used for detecting and following human scent. Human scent is unique and individual to a person, similar to fingerprints and DNA. Bloodhounds can identify and separate one human from another, and this makes them excellent for tracking a person from a fire, explosives incident or other criminal scene. Bloodhounds are also used to find missing or lost persons. Training and certification is done gratis through the Virginia Bloodhound Search and Rescue Association, utilizing protocols and methods from FEMA guidelines and the National Police Bloodhound Association. **The program is sponsored by the**

Old Dominion Kennel Club, which provides 100% of the veterinary and food costs for the program.

An **accelerant detection canine** is used for detecting the presence of ignitable liquids which are often used maliciously to set items on fire. Through a partnership with the Bureau of Alcohol, Tobacco, Firearms, and Explosives (BATF), this canine was provided and trained at no cost to the County. The canine and handler successfully completed a six week training program and the canine was certified to detect a wide range of ignitable liquids, to include gasoline, diesel fuel, kerosene, lighter fluid, lamp oil, torch



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fuel and camp fuel. The team successfully completed their first mandatory in depth recertification testing this year. **The program is sponsored by the Briggs Adoption Center, which provides 100% of the veterinary and food costs for the program.**

The **explosives detection canine** retired in 2009 and is expected to be replaced in FY 11. This is due to the current fiscal situation.

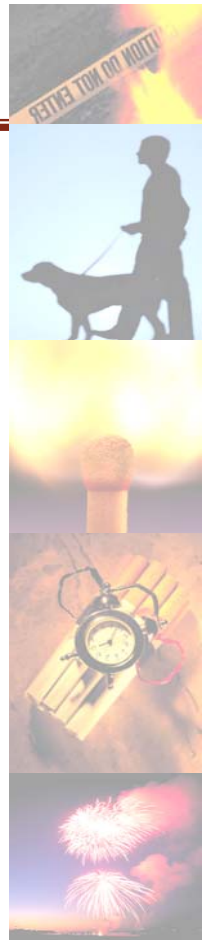
The canines have demonstrated a reduction in the overall time involved in investigative activities due their ability to isolate various scents which otherwise require detailed and time consuming searches by investigative personnel.

In 2009, the canines assisted in **59** fire investigations. The canines' positive alerts have led to evidence that has resulted in the successful arrests and convictions for crimes including serial arson and sexual assault.



Training Services Provided

The Fire Marshal's Office assists with the training of new firefighter recruits. The recruits are taught basic skills on how to recognize and identify potential harmful code violations during routine Engine Company Inspections. The recruits are also taught how to recognize and identify potential indicators of an arson and the importance of preserving the fire scene for the Fire Marshal's investigation. In addition, the Fire Marshal's Office also assists with providing training to the Loudoun County Sheriff's Department and Leesburg Police personnel as well as other local police agencies during roll call training. The training provides a more in depth background as to what the Department does and what it has to offer. Arson recognition as well as explosives recognition is also covered.



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The National Fire Picture - 2008

There were **3,320** civilians that lost their lives as the result of fire.

There were **16,705** civilian injuries that occurred as the result of fire.

Fire killed more Americans than all natural disasters combined.

83 percent of all civilian fire deaths occurred in residences.

There were an estimated **1.5 million fires** in 2008.

Direct property loss due to fires was estimated at **\$15.5 billion**.

An estimated 32,500 intentionally set structure fires
resulted in **315 civilian deaths**.

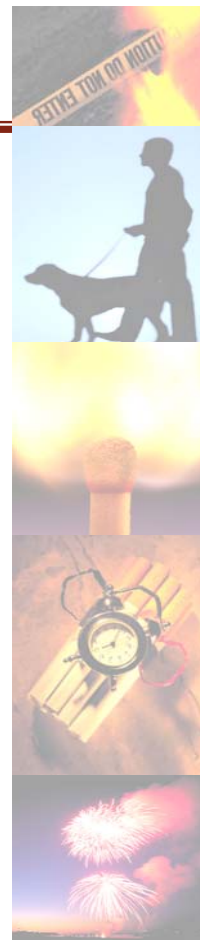
Intentionally set structure fires resulted in an estimated **\$866 million**
in property damage.

Source: National Fire Protection Association Fire Loss in the U.S. 2008
and USFA's Firefighter Fatalities in the United States in 2008.



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